



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

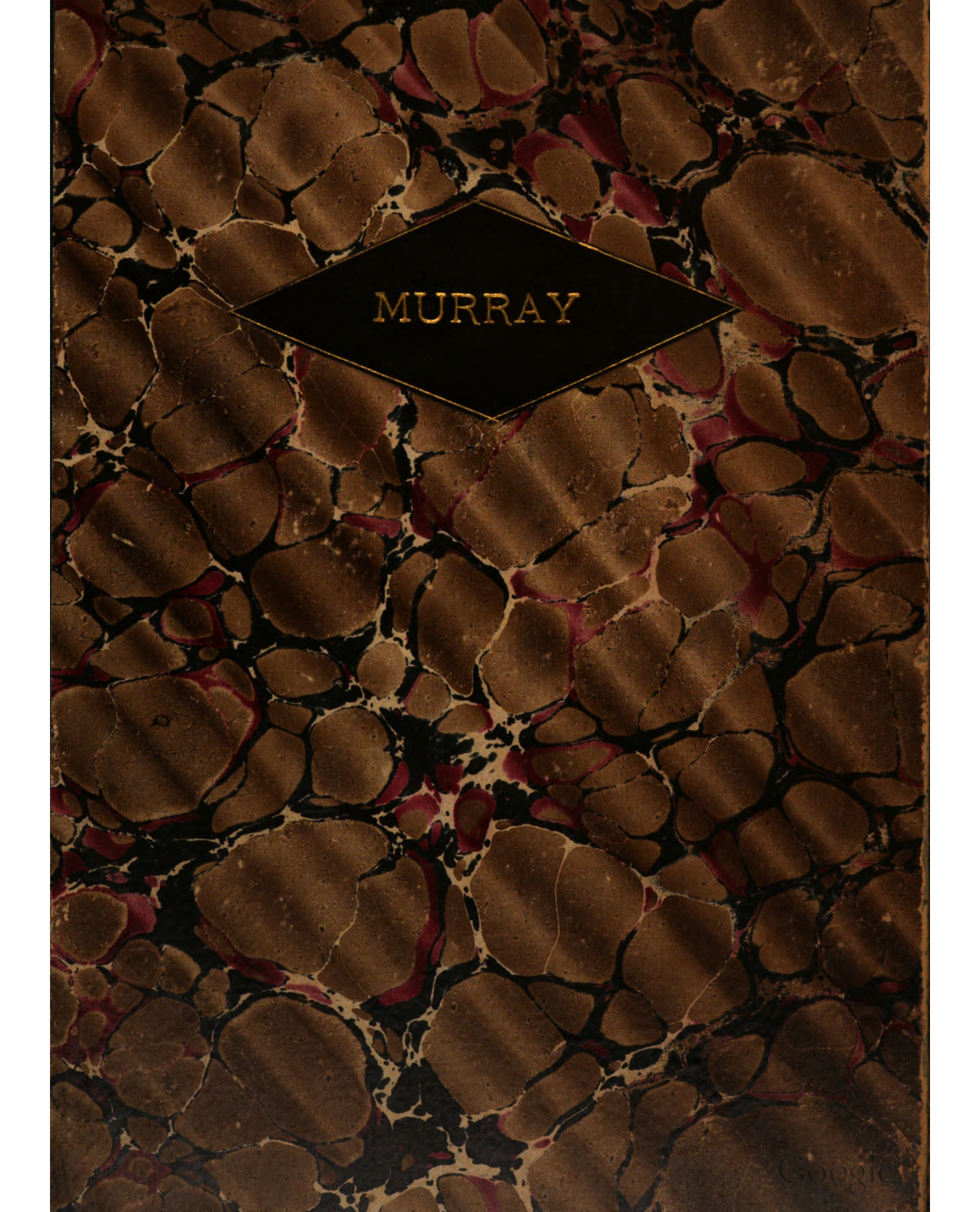
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

The image shows the front cover of an old book. The cover is decorated with a marbled paper pattern. The pattern consists of large, irregular, brownish-tan shapes that resemble stones or cells, separated by a network of dark, almost black, veins. Interspersed among these are smaller, more delicate veins of a deep red or magenta color. The overall effect is a complex, organic, and somewhat chaotic texture. In the center of the cover, there is a black diamond-shaped label with a thin gold border. Inside this label, the word "MURRAY" is printed in a gold, serif, all-caps font. The edges of the cover show some wear and slight discoloration, typical of an antique binding.

MURRAY

Library of the Museum
OF
COMPARATIVE ZOÖLOGY,

AT HARVARD COLLEGE, CAMBRIDGE, MASS.

Founded by private subscription, in 1861.

Library of H. A. Hagen

No. 43,342
October 20, 1915.

ON

THE PEDICULI

INFESTING THE

Agg. - 74
2/11/74

DIFFERENT RACES OF MAN.

BY

ANDREW MURRAY, ESQ., OF CONLAND.

FROM THE

TRANSACTIONS OF THE ROYAL SOCIETY OF EDINBURGH, Vol. XXII. PART III.

H. A. Hagen.

EDINBURGH:

PRINTED FOR THE SOCIETY BY NEILL AND COMPANY.

MDCCCLXI.

Sm

XXIV.—*On the Pediculi infesting the Different Races of Man.* By ANDREW MURRAY, Esq., of Conland. (With two Plates—XXIX. and XXX.)

(Read 17th December 1860.)

The bearing which the subject of the following communication has upon the much-vexed question of the unity of the human species, and the inferences which may be drawn from it in relation thereto, invest it with an importance which would not otherwise belong to it.

The position which the question I allude to at present occupies is this. On the one hand, the advocates of the view that all men are not of the same species, but that they compose a genus consisting of many species, maintain that the parasites which infest the different races of man are distinct; and because we usually find that distinct species of parasites are allotted respectively to the different species of the lower animals, they infer that the same rule must hold with man, and that therefore each different race possessing a distinct parasite must be a distinct species. Their opponents, on the other hand, deny the fact that these parasites are distinct, asserting that one and the same species of *Pediculus*, and no other, infests all the races of man in every quarter of the globe; and I believe they add, that, even although they were found to be distinct, the inference thence drawn is neither necessary nor warranted. But, in the first instance, the parties are at issue as to the question of fact. It may seem strange that this should be the case, as the very circumstance that the statement has been made and denied, implies that the subject or object has been examined by at least two observers (the first affirmer and the first denier), and probably by many more; and unless the inquiry be attended with more than common difficulty, such an examination should have furnished materials for its settlement. The explanation of the discrepancy, and of the opposing opinions entertained on the subject, lies, I believe, in this, that the affirmative statement has probably been made on the strength of a comparison between the *Pediculi* found on the negro and those found on white men, the former being the exotic race most accessible to the observation of American ethnologists, from whom the above statement has chiefly emanated; and as the parasite of the negro is blackish, while that of the European race is whitish, the hasty observer has thereupon jumped to the conclusion that they are different; while the more deliberate observer, who has noticed that the colour is greatly owing to the contents of the semi-transparent body, has, with similar inconsequence, come to the conclusion that there is no difference but that of colour; and that the colour of the parasite is solely owing to the hue of the pasture-ground. No other differences, so far as I know, have ever been noticed.

Feeling it to be desirable that the matter of fact should be ascertained,—that, whatever may be the result, and whatever effect that result may have on the question into which its services have been pressed, we should at least know what the truth really is,—I have taken advantage of the opportunities which a somewhat extended correspondence with foreign countries has put in my hands, to endeavour to find out how the fact stands; and I propose now to submit to the Society the result of my inquiry.

I would premise, however, that the inquiry has not been made without difficulty, and on that ground solicit indulgence for the imperfections and blanks which I have been unable to supply. The chief difficulty was to procure specimens, which could only be done by inducing friends to interest themselves in the matter.

But the difficulty of procuring specimens is not all. There are other elements involving doubt which must be kept in view: one is their size, and the other their colour; what attention, if any, is to be bestowed upon either? As the *Pediculus* does not, like most other insects, pass through metamorphoses after issuing from the egg, but merely changes its skin, individuals are to be found of all sizes; and, unlike the beetle or the butterfly (which, after emerging from the chrysalis, never increase in size), individuals grow larger, merely changing their skins a certain number of times. All comparison of actual size is thus excluded up to a certain age. After their last moult, however, the skin assumes a stronger consistency and more decided colour, and a full-grown specimen can usually be recognised as such. In my examinations I have uniformly rejected half-grown individuals, and only compared those which, from their size, texture, and colour, appeared to be adult.

The value of colour as a character is a point of greater difficulty. As I have already remarked, it is colour which has given rise to the statement that different species are peculiar to different races. There is no doubt that the species found on the white man are pale, and those on the black man dark. But in most other cases among insects, colour *per se* is either ignored as a character altogether, or admitted with the greatest diffidence. Further, colour may be derived from the nature of the feeding-ground; and it is stated by some, that if a white specimen, taken from a white man, be put upon a black man, it will become black, and *vice versa*. The Rev. Mr HISLOP, known as well for his scientific as for his missionary labours in India, informs me that at Nagpore he thinks he has seen dark *Pediculi*, which have found their way from coloured nurses to white children, after a time becoming white; and another friend has informed me that on one occasion, when seated in church behind two lads—the one dark-haired and the other light-haired, both swarming with vermin—he noticed that those upon the dark-haired lad were darker than those on the light-haired one. Such circumstances would seem to indicate that colour was accidental, and therefore of no

consequence; but it is not wholly so. The animal owes its colour to two different sources: the one (its true colour) to its chitinous external covering—this colour it cannot lose; the other (its accidental colour) to the food it has swallowed. Being semi-transparent, the contents of the body are seen through the chitinous skin or outer skeleton. This colour it loses when the intestines, &c., are emptied. I have seen a living specimen of the dirty-coloured European *Pediculus*, after a few days' abstinence in a quill, lose all its dirty colour, and become entirely of a pale horny, almost colourless, hue, which is the natural colour of its external skeleton. The black *Pediculus*, gorged with the blood of a negro, would, I have no doubt, under similar treatment, get rid of the blackness due to the contents of the body, but retain that amount of brown tint which belongs to the external covering. Colour, therefore, is not to be wholly discarded; and when it goes along with other distinctions, may be properly used as a subsidiary, although subordinate character in determining species.

A difficulty of a different kind arises from there being, or being supposed to be, more than one species infesting the same race or the same individual. There are usually said to be four species found on Europeans. One of these (*Phthirus inguinalis*) is, however, not a true *Pediculus*, and therefore does not fall within the limits which I have assigned to myself in this paper—limits which I have adopted not from any wish or intention so to limit myself, but solely from necessity, as I have not been fortunate enough to procure any specimens of *Phthirus* from other nations. That other varieties or species of *Phthirus* exist, however, is possible, for we hear of a parasite specially infesting the eye-lashes of some of the natives in the East Indies, which probably may be a *Phthirus*. But as I have not received any specimens of this or any other exotic *Phthirus*, I am compelled to leave them out of the inquiry. This does not, however, at all interfere with the accuracy of the results drawn from the *Pediculi* proper, as the *Phthirus* is generically distinct from the *Pediculus*, the grasping or scansorial claws, as they are called, being on the posterior feet instead of the anterior, so that they cannot possibly be confounded with them. A third so-called species of *Pediculus* may also be discarded from our consideration, as having no existence in nature—the *P. tabescentium*, said to be peculiar to diseased persons. DENNY, in his work on the Anopleuræ, seems to believe in it; but he never saw it, doubtless for the best of all possible reasons, viz., that it does not exist. Every instance of the supposed occurrence of this species, which has fallen under the notice of any competent observer, has turned out to be merely an unusual profusion of the common *Pediculus vestimenti*. In the only instance which fell under my own observation, this was the case. Dr JACKSON of this city, some years ago consulted me regarding a case of the kind, where a patient, a young lad, was supposed to be infected. Repeated washings seemed to have no effect upon this terrible disease. A few hours after washing, the unfortunate victim was found again to be swarming as badly as

ever ; and Dr JACKSON could speak to this fact from personal observation. I expressed my disbelief in the supposed disease, and recommended a more searching inquiry into collateral circumstances, and, above all, the securing specimens for examination. Dr JACKSON soon procured these ; and neither of us will, I think, readily forget the examination of the specimens. Not being supplied with entomological apparatus, he had put them into an old pomatum pot, which happened to be at hand. With justifiable pride he announced that he had secured the desiderated specimens, and had three in this pomatum pot, which he had carefully enveloped in several folds of brown paper. On removing the paper, however, and opening the pot, to our dismay, instead of the three specimens we only found one. The other two had escaped from the insufficiently secured vessel ; but whether in Dr JACKSON'S pocket or in my room we could not tell. Friendship has its limits ; and I confess I was unfriendly enough to hope that the escape had taken place before the pomatum pot reached me. Fortunately their comrade remained behind to settle the question, that the supposed *Pediculus tabescentium* was only the common *Pediculus vestimenti*. Dr JACKSON had further ascertained the fact that although the patient was frequently and carefully washed, he was always immediately thereafter re-indued in his old dirty flannel jacket, whence the swarms were successively supplied which astonished beholders ; and the further history of the case was, that so soon as the dirty flannels were burned, the mysterious disease disappeared, and the patient recovered. Such, I have no doubt, would be found to be the rationale of Lady Penruddock's case, and of all similar recorded cases of the disease of *P. tabescentium*, which have obtained credence from not having been examined at the time ; and believing it to be so, I dismiss that species of *Pediculus* as a fiction.

The two remaining kinds, *Pediculus capitis* and *P. vestimenti* (the former appropriated to the head and the latter to the body), are more embarrassing—for hitherto no very good characters of them have ever been indicated.

I think, indeed, that I have found such characters, but have not examined a sufficient series of specimens to be able to decide with certainty. The form of the head species is smaller, more elongate, and narrower than the other, and it has a series of dark markings on the margin of the abdomen ; but the body species has the margin also similarly margined, only with yellowish instead of dark markings, and individuals in both species vary in breadth and length so as greatly to destroy the value of the characters drawn from their relative proportions. As might be anticipated, their specific distinctness while maintained by some authors is denied by others, who consider the larger variety as merely indicating more liberal diet and less active habits. As already said, I think they are distinct ; and in addition to the difference in the general appearance, it will be found that the *P. vestimenti* always wants the spine at the top of the thumb, and has little or no projections on the inner side of the penultimate joint—characters which

accord with its less scansorial mode of life, which requires less powerful appliances for seizing and tenaciously retaining hold of the hairs through which it passes. The concurrent opinion of those who are practically familiar with the animals and their habits also confirms the view that they are distinct species.

I remember the remark of a young private soldier on his return, wounded, from the Crimea, who, in speaking of the sufferings of the troops before Sebastopol, dwelt upon the annoyance experienced from these parasites; and in reply to some suggestion of mine as to the specific virtues of a small-toothed comb, which I believed formed part of a soldier's necessaries, answered, "Oh! we did not mind the head ones; it was the body ones,"—thus implying a clear and well recognised distinction between the two in power of annoyance. We have thus two scarcely decipherable species infesting the same race; and when we receive specimens from a foreign race, we are subjected to the disadvantage of being unable positively to say to which of these two kinds they belong. In all but one or two instances, however, I have, I think, been able to refer the specimens received to their proper kind; and if in these instances I have failed to do so, still this can scarcely affect the result to which I have come, because, in the first place, the very similarity which prevents me distinguishing between them with certainty, renders a misplacement of less consequence, and, in the next place, an error in one or two only out of several cannot have any material effect on the general result, so far as the inquiry into the existence of different species or different races is concerned.

I annex at the close of this paper a detailed description of the differences which I have found between the specimens from the different races and localities, and shall briefly notice their general tenor, and the bearing they have upon the main question which I propose to solve.

First, is there really any difference at all in the specimens from different races?

As to colour, I find there is a considerable difference. The coloured races of man have correspondingly coloured parasites. Those of the West African negro and Australian are nearly black; those of the Hindu, dark and dusky; those of the Africander and Hottentot, orange; of the Chinese and Japanese, yellowish brown; of the Indians of the Andes, dark brown; of the Californian Indians, dusky olive; and those of the more northern Indians, near the Esquimaux, paler, approaching to the light colour of the parasites of the European.

As to form, there is not much scope for difference. In other insects, the difference between species of the same genus chiefly consists in the sculpture upon the body and in the different form of some of its parts; but in the *Pediculi*, the body being soft, there is not much room for sculpture. It has a certain kind of wrinkled sculpture approaching to the texture which gives mother of pearl its iridescent lustre; and from this cause, in certain lights under the microscope,

something of this iridescence may be observed on the body of the Pediculi; but of more decided sculpture, or special marks, we can have little. The soft flexible skin allows what might be a hollow or depression in one case to be raised into a ridge or an elevation in another. The only parts which are sufficiently hard to retain their form under some degree of pressure are the legs and the antennæ; but unfortunately, in the insect world, these parts are usually so constant throughout all the species of a genus, that the existence of differences there seldom fail to indicate a different genus. We can only expect a very trifling amount of difference there, and this, when found to exist, must be reckoned of greater value than a larger difference in some more variable parts. After a careful search for decipherable characters, I have found the best in the form and proportions of the legs and claws, and more especially in the anterior legs and claws of the male, which are (as is frequently the case in all orders of insects) larger and more dilated than those of the female.

Using these as characters, then, it is impossible to deny that there are tolerably well-marked differences between the parasites of different races; and as in several of these races I have had the benefit of a large series of specimens, I am able to add that these differences are constant. A glance at the drawings (Plates XXIX. and XXX.), which have been made with every care and precaution by the aid of the *camera lucida*, will show the nature of these differences. The teeth of the claw vary considerably. In some, as in the European, the Caffre, and the Japanese, they are scarcely visible. In others, as the Hindu, Indian of the Andes, &c., they are numerous, large, and almost tubercular. In others, as the negro and King George Sound Australian, they are limited to two or three well-marked serrations. The form and proportions of what I shall call the thumb, are also different. In some, as the Mozambique Africander, Californian Indian, and Indian of the Andes, the thumb is excessively developed; in others, as the European, the Japanese, and Australian, only moderately so. The form of the penultimate joint also varies to a very considerable extent, in some being long, narrow, elongate and straight; while in others it is conical, curved, short, and broad at the base.

There remains the question, what is the value of these differences as bearing upon the unity of the human species? I am bound to confess that I think the question is left exactly where it was before. It has been proved that there are differences, and that these differences are constant and permanent—that is no doubt something. But, unluckily, these differences are most singularly similar to the differences in the races whose unity is the question in dispute, and to solve which this evidence has been adduced. If I cannot believe that the negro is a different species from the European, on account of his being black instead of white, neither should I believe that the *Pediculus* of the Negro is different from that of the European because it is black instead of white. If I

cannot believe that the Australian is different from the Esquimaux because he has proportionally a much longer leg, neither can I believe that the Australian *Pediculus* is different from the Slave Lake *Pediculus*, because it has a longer and straighter penultimate joint to its tarsus. If the curved tibia of the African does not constitute him a different species from races with straight tibias, neither should the greater or less curvature of the joints of the tarsi in the *Pediculi* be considered to form specific distinctions in them. It happens, however, that not only are the differences, both between man and man, and *Pediculus* and *Pediculus*, very similar in degree, but they are also differences of the same kind. They are differences in colour and proportion of the very same, or, at all events, analogous parts in both. To attempt to draw any deductions from these differences in the *Pediculi*, would therefore, as it appears to me, be something very like begging the whole question.

Unsatisfactory though the result of my inquiry may thus be deemed, I cannot look upon it as wholly thrown away. We now know what the truth of the matter really is, and no longer need to argue in the dark upon doubtful premises.

Explanation of Terms.

Fig. 1. Male.

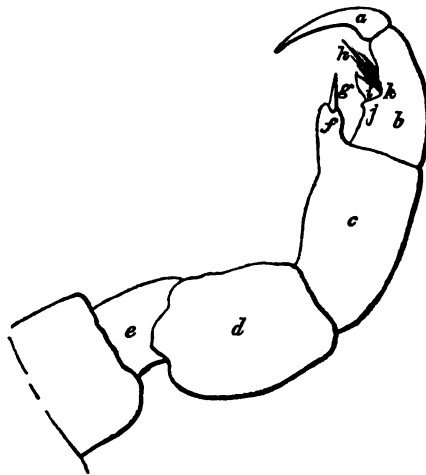
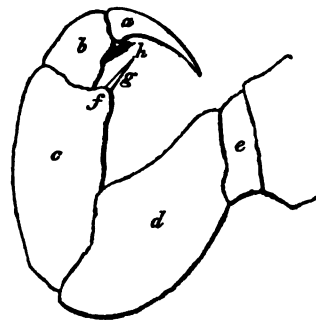
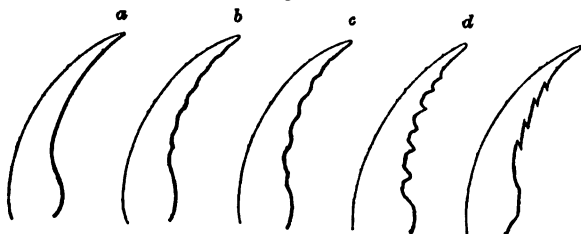


Fig. 2. Female.



a. Claw. b. Penultimate joint. c. Tibia. d. Femur. e. Shoulder joint. f. Thumb. g. Apical spine of thumb. h. Tassel. i. Lamina. j. Salient angle. k. Re-entering angle.

Fig. 3.



a. Simple. b. Rippled. c. Waved. d. Toothed. e. Serrated.

Descriptions.

The following is a brief description of the different kinds I have examined, preliminary to which I furnish an explanation of the terms applied to the different parts, not hitherto been used as characters:—

British.—Dirty white; elongate; antennæ short, and rather robust.

♂ Anterior leg—Thumb moderate, slightly curved on exterior side; apical spine strong; penultimate joint of tarsus curved, not much broader at base than at apex; projection or inner plate small; claw equal in length to penultimate joint, moderately curved, very slightly irregularly rippled on the edge.

♀ Anterior leg—Thumb almost wanting; apical spine the length of the penultimate joint, which is short and narrow; claw more than twice its length—not toothed.

Scotland.

Russian.—Dirty white; claws and tip of thumb yellow; obovate.

♂ Anterior leg—Thumb large, with a slight exterior bend; spine at tip wanting, and seems never to have been there;* penultimate joint broad at base, its termination more conical; inner projection or plate almost wanting; claw longer than the latter, more powerful than in the Scotch; teeth irregular and shallow, like a slight ripple.

♀ St Petersburg.

(Count MOTSCHULSKY.)

Slave Lake.—Dusky blackish; obovate.

♂ Anterior leg—Thumb large and thick, very slightly rounded externally, and with scarcely any bend; spine at top wanting; penultimate joint short, and nearly as broad at top as at base; inner projection or plate almost wanting; claw nearly twice as large as the latter, thick and powerful, very considerably curved, with two or three smallish teeth.

Slave Lake, from the head and body of a child. (Mr BERNARD R. ROSS.)

Californian Indians.—Dusky olive brown. Long and narrow.

♂ Anterior leg—Thumb large, thick and long, not bent, only slightly rounded exteriorly; apical spine small and short; penultimate joint thick and robust, not very much wider behind than in front; inner projection almost wanting; claw longer than penultimate joint, moderately broad edge, not toothed, slightly waved or rippled.

* Perhaps this is the specific character of *P. vestimenti*.

♀ Anterior leg—Thumb large; apical spine strong, as long as the thumb itself; penultimate joint moderate; claw a half longer, not toothed.

California.

(Mr W. MURRAY.)

A very distinct form.

South American Andean Indians.—Rich brown; body obovate; antennæ more slender and slightly more elongate than in European.

♂ Anterior leg—Thumb very long, bent like a quarter-bent thumb; apical spine robust; penultimate joint long, straight, and almost as broad in front as at the base; the inner projection small, but well defined and distinct, nearly midway between the base and apex; claw shorter than penultimate joint, robust, abruptly thickened and enlarged at the base, so as to form a sort of head nearly of the same thickness until towards the tip—strongly toothed or serrated in the middle.

Quito.

(Prof. JAMESON.)

This is the most peculiar species I have met with. The long thumb, and long, nearly cylindrical straight penultimate joint, are very peculiar; and it is the only species I have seen which has the claw shorter than the penultimate joint.

South American Indians, Tierra del Fuego.—Dusky olive; obovate.

♂ Not seen.

♀ Anterior leg robust—Thumb small; apical spine comparatively very strong, and parallel almost to the point, more than half the length of the penultimate joint, which is moderate, not much narrower at the point than the base, and only half the length of the claw, which is rather narrow, not rapidly tapering, and without teeth.

Tierra del Fuego (Mr DARWIN, "Voyage of the Beagle"). (Mr DENNY.)

Japanese.—Burnt Sienna brown; obovate.

♂ Anterior leg—Thumb short and slender, subserrated at the top, not elbowed exteriorly; apparently without a spine (probably the spine foreshortened); penultimate joint long, conical, not greatly broader at base than at tip; inner plate or projection slight; claw long, equal in length to penultimate joint, nearly of uniform thickness throughout, a very little thicker at the base, not serrated, edge slightly rippled towards the base.

From a Japanese in the hospital at San Francisco. (Mr W. MURRAY.)

Chinese.—Rich burnt Sienna brown; obovate.

♂ Anterior leg—Thumb long and well separated from the penultimate joint, slightly bent on exterior; apical spine distinct; penultimate joint twice as long

as thumb, wider at base than at top, salient angle slight, re-entering angle distinct, filled with a rather broad lamina below the tassel; claw about the length of the penultimate joint, simple, the distal half of its length narrow and slender, the base thicker.

From a Chinaman in San Francisco.

(Mr W. MURRAY.)

East Indian.—♂ Dusky. Anterior leg—Thumb tolerably long, not very thick, projecting, scarcely bent on the exterior; apical spine distinct, but not very strong; penultimate joint wider at bottom than top; salient angle distinct and well defined, but small; claw of the length of the penultimate joint, rather thick, and tapering sharply towards the point; very much toothed, the teeth sharp, somewhat irregular, half serrated and half waved, pointing backwards.

♀ Anterior leg—Thumb distinct, about length of apical spine, which is short; penultimate joint short, and rather narrow; claw a half longer than the penultimate joint; not toothed, a good deal curved, and tapering all the way from the base to the apex.

From both Hindus and Mahomedans in Calcutta.

(Dr FAYRER.)

This *Pediculus* has the claw more toothed than any other I have examined. In some the teeth or serrations are better defined and larger, but in these instances they are fewer in number; here almost the whole edge of the claw is tolerably deeply toothed, so much so as to be visible with an ordinary lens.

Australian (King George's Sound).—Dark brown; obovate.

♂ Anterior leg—Thumb projecting, but not robust; antennæ more slender than in the European species, less so than in the Andean species; apical spine moderate; penultimate joint robust, very little curved, not greatly wider at base than apex, inner plate nearly wanting; claw longer than penultimate joint, not slender, and with two very well marked serræ or teeth, one in the middle, the other intermediate between it and the apex, and the trace of a third intermediate between the second and the apex.

From the natives of King George's Sound.

(Mr G. MAXWELL.)

Australian, Wimmera Tribe.—Dusky; rather elongate.

♂ Anterior leg—Thumb slender, about half the length of the penultimate joint, slightly rounded, not bent on the exterior; apical spine rather short. Penultimate joint truncato-conical, much wider at the base than the apex, with scarcely any inner plate or projection; claw curved, and tapering gradually, not toothed.

Wimmera tribe, Australia.

(Mr LEARMONTH.)

Caffre.—Orange-coloured, oblong ovate.

♂ Anterior leg—Thumb small, narrow, and applied pretty closely to penultimate joint, with a long spine. Penultimate joint elongate, a little broader at the base than at the apex, inner projections almost wanting, or, rather, a hollow before the place where the projection usually is; claw narrow, equal in length to the penultimate joint, nearly equal in breadth, except at base and apex, without teeth.

South Africa.

(Mr DENNY.)

Hottentot.—Yellow, oblong ovate.

♀ Anterior leg—Thumb scarcely existing; apical spine slender and tapering to a fine point, sharply from the base. Penultimate joint very long and conical, narrow at point, not very wide at the base, without inner projection; claw small, tapering slowly until near the top, when it comes rapidly to a point about three-fourths of the length of the penultimate joint,—toothless.

Cape of Good Hope.

(Mr DENNY.)

Mozambique Africander.—Orange-coloured, black in the middle; large, obovate.

♂ Anterior leg—Thumb large, long, and with a decided bend like a quarter bent thumb, with a long and strong spine at tip. Penultimate joint shorter than claw, somewhat curved, wider at base than apex; inner plate large and well defined, with shoulders and a projecting rounded point; claw long, but comparatively not very robust, rather curved, and with sharp pointed, ripple-formed teeth.

♀ Anterior leg—Thumb distinct, apical spine very long (bent outwards), more than twice the length of the thumb. Penultimate joint very long for a ♀ and truncate-conical; inner plate distinct; claw narrow, sub-parallel, shorter than penultimate joint—not toothed.

South Africa.

(Mr DENNY.)

The largest kind which I have seen. Very distinct and well marked.

West African Negro.—Dark, olive black, somewhat elongate.

♂ Anterior leg—Thumb short, with a strong thick spine, without exterior bend, or nearly so. Penultimate joint as long as claw, not much curved, broader at base than at top, inner plate distinct, but not large; claw comparatively slender towards tip, with three serriform teeth.

♀ Anterior leg—Thumb almost wanting; apical spine rather slender, only half the length of penultimate joint; claw long and narrow, without teeth.

Georgia—from a genuine freshly imported West African negro.

(Mr DENNY.)

Explanation of Plates.

PLATE XXIX.

Anterior claws of—		Anterior claws of—	
1.	<i>Pediculus capitis</i> (Scottish) ♂	12.	<i>Pediculus capitis</i> (Genuine West African Negro, imported into Georgia) ♀
2.	Do. Do. ♀		
3.	Do. (Hindu, Calcutta) ♂	13.	Do. (South American Indian, Andes, Quito) ♂
4.	Do. Do. ♀		
5.	Do. (Caffre)	14.	<i>Pediculus vestimenti</i> (Russian) ♂
6.	Do. (Mozambique, Africander) ♂	15.	Do. (North American Indian, Slave Lake) ♂
7.	Do. Do. ♀		
8.	Do. (Californian Indian) ♂	16.	Do. (Japanese) ♂
9.	Do. Do. ♀	17.	<i>Pediculus capitis</i> (Tierra del Fuego) ♀
10.	Do. (Australian, King George Sound) ♂	18.	Do. (Hottentot) ♀
11.	Do. (Genuine West African Negro, imported into Georgia) ♂	19.	Do. (Australian, Wimmera tribe) ♂
		20.	Do. Do. ♀

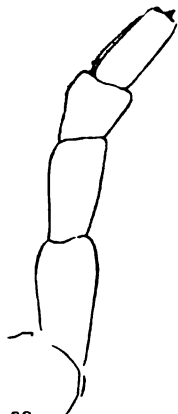
PLATE XXX.

Anterior claw of—			
21.	<i>Pediculus capitis</i> (?) (Chinese) ♂	31.	Antennæ of No. 15 (Slave Lake Indian)
22.	Antennæ of No. 13 (Quito)	32.	Do. No. 21 (Chinese)
23.	Do. No. 10 (King George's Sound)	33.	Do. • No. 1 (Scottish)
24.	Do. No. 16 (Japanese)	34.	Do. No. 11 (West African Negro, from Georgia)
25.	Do. No. 17 (Tierra del Fuego)	35.	Do. (American Negro, full blood)
26.	Do. No. 19 (Wimmera tribe, Australia)	36.	Do. (West African Negro, W. Africa)
27.	Do. No. 3 (Hindu)		
28.	Do. No. 6 (Mozambique, Africander)	37.	Do. No. 5 (Caffre)
29.	Do. No. 18 (Hottentot, Cape)	38.	Do. No. 14 (Russian)
30.	Do. No. 8 (Californian Indian)		

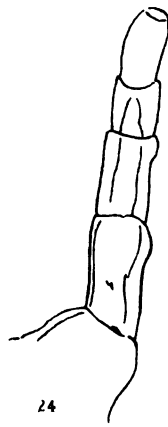




22



23



24



25



26



27



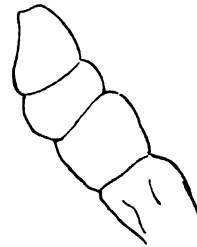
28



29



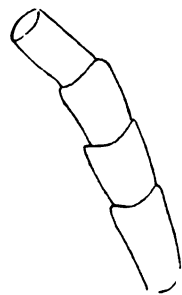
21



30



31



32



33



34



35



36



37



38



3 2044 107 206 385



Digitized by Google

